

Claims

1. A video signal processing device for processing keeping signal levels of red signal, green signal and blue signal per pixel of video signal under the predetermined reference level, comprising:

luminance signal forming means for forming a luminance signal of said pixel based on said red signal, green signal and blue signal per said pixel of said video signal;

detection means for detecting saturation per said pixel of said video signal;

compression processing means for compression processing said red signal, green signal and blue signal of the corresponding pixel without changing hue and saturation of said pixel but changing brightness based on said luminance signal formed by said luminance signal forming means and the corresponding detection result obtained by said detection means; and

control means for controlling the signal levels of said red signal, green signal and blue signal compression processed by said compression processing means as required without changing said hue and said brightness of said pixel but changing said saturation.

2. A video signal processing device according to Claim 1, wherein :

said compression processing means;

increases the compression ratio of said red signal, green signal and blue signal as the saturation of said pixel increases.

3. A video signal processing device according to Claim 1, comprising:

 said compression processing means;

 comprises correction means for selecting the compression ratio corresponding to said luminance signal formed by said luminance signal forming means from the predetermined amplitude transmission characteristic changing corresponding to the signal level of said luminance signal and for correcting said selected compression ratio based on the corresponding detection result obtained by said detection means; and

 compression means for compression processing said red signal, green signal and blue signal by multiplying said red signal, green signal and blue signal of the corresponding pixel by said compression ratio corrected by said correction means respectively.

4. A video signal processing device according to Claim 3, wherein:

 said amplitude transmission characteristic is formed of the knee effect showing gains for compressing said luminance signal.

5. A video signal processing device according to Claim 3, wherein:

said amplitude transmission characteristic is the cumulative distribution of the occurrence frequency of said signal level of said luminance signal.

6. A video signal processing method for processing keeping the signal levels of red signal, green signal and blue signal per pixel of video signal under the predetermined reference level, comprising:

the first step for forming luminance signal of said pixel based on said red signal, green signal and blue signal per said pixel of said video signal and for detecting saturation per said pixel of said video signal;

the second step for compression processing said red signal, green signal and blue signal of the corresponding pixel without changing hue and saturation of said pixel but changing the brightness based on said luminance signal obtained at the first step and the corresponding detection result; and

the third step for controlling said signal level of said red signal, green signal and blue signal processed at the second step as required without changing hue and luminance of said pixel but changing said saturation.

7. A video signal processing method according to Claim 6,
wherein:

in said second step;

the compression ratio of said red signal, green signal and blue signal increases as the saturation of said pixel increases.

8. A video signal processing method according to Claim 6, wherein:

in said second step;
the compression ratio is selected from the prescribed amplitude transmission characteristic changing corresponding to the signal level of said luminance signal corresponding to said luminance signal formed at said first step, said selected compression ratio is corrected based on the corresponding detection result obtained at the first step, and said red signal, green signal and blue signal are compression processed by multiplying said red signal, green signal and blue signal of the corresponding pixel by said corrected compression ratio.

9. A video signal processing method according to Claim 8, wherein:

said amplitude transmission characteristic is formed of knee effect showing gains for compression processing said luminance signal.

10. A video signal processing method according to Claim 8, wherein:

said amplitude transmission characteristic is formed of the

**cumulative distribution of the occurrence frequency of said signal
level of said luminance signal.**

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